HBNI

Alumni Webinar

Friday,
30th October 2026 at 15:30 hrs

Venue:

Conference Hall , First Floor, New Training School Complex, Anushaktinagar, Mumbai

Link for : -

YouTube:
https://www.youtube.com/live/n9GxpzClrjI

Webex :
https://hbni.webex.com/hbni/j.php?MTID=medf09198dbf74308308428834dfef3d2

Dr. Madhura Bellippady

Materials Engineer - Coatings
Siemens Energy AB,
Sweden



HBNI Alumni Webinar Series: Continuation of "Trust the Journey: From Doctoral Research in High-Temperature Coatings to Material Engineer in the Global Energy Sector"

Dr. Madhura Bellippady is an alumna of Homi Bhabha National Institute (HBNI) and is currently serving as a Materials Engineer – Coatings at Siemens Energy AB, Sweden. She earned her Ph.D. from HBNI in 2022 at the Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, Tamil Nadu. Following the completion of her doctoral studies, she worked as an Institute Postdoctoral Fellow at the Indian Institute of Technology (IIT) Madras. She subsequently moved to Sweden to pursue postdoctoral research at University West.

Her research expertise lies in the development and characterization of Thermal Barrier Coatings (TBCs) and Environmental Barrier Coatings (EBCs) for high-temperature applications. Her work has focused on advancing coating technologies to enhance performance and durability under extreme operating conditions, with particular emphasis on developing TBC systems for additively manufactured (AM) components. Her research spans applications in the nuclear, aerospace, and energy sectors, contributing to the reliability and efficiency of high-temperature engineering systems.

Abstract

This session continues the conversation initiated during the earlier HBNI Alumni Webinar, "Trust the Journey: From Doctoral Research in High-Temperature Coatings to Material Engineer in the Global Energy Sector." Dr. Madhura Bellippady will briefly revisit the key highlights of the previous session and build upon them to further explore the evolution of thermal barrier coating technologies, the translation of doctoral research into industrial applications, and her professional journey from academia to the global energy sector.

A Ph.D. journey often begins with curiosity and a research problem, but its impact frequently extends far beyond the boundaries of a thesis. This talk traces the evolution of thermal barrier coating technologies from doctoral research at Homi Bhabha National Institute (HBNI) for nuclear applications to advanced high-temperature coating systems for gas turbines in the global energy sector.

The presentation highlights how research on thermal barrier coatings progressed through postdoctoral work at IIT Madras and University West, Sweden, leading to applications across nuclear energy, aerospace, automotive, and land-based gas turbines. It also discusses the common scientific principles underlying these technologies and the role of advanced coatings in achieving high-temperature performance, efficiency, and reliability. Beyond the technical aspects, the talk reflects on the transition from academia to industry, the value of interdisciplinary and international research, and the importance of persistence, adaptability, and lifelong learning. Through this journey, it conveys a simple message: dedication to research and continuous learning can open doors to rewarding careers across the global scientific and engineering landscape.

All are cordially invited for in person attendance